

REMARKS

Entry of the foregoing amendments and reconsideration of this application is respectfully requested. Claim 16 has been amended to more specifically set forth the invention. Claim 18 has been amended to clarify the fact that it specifies structure and is not a product by process claim. New claims 23-26 have been added to provide more complete coverage of the invention. Claims 16-26 remain in the application.

Claims 16-19 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Kizuki et al. Claims 16-22 are rejected under 35 U.S.C. 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kizuki et al. (U.S.P. 6,506,618). Applicants respectfully traverse all of these rejections.

Applicants have now included in all of the claims the fact that the surfactant is actually incorporated into the crystalline structure of the epitaxially grown semiconductor material. This actual incorporation of the surfactant into the crystalline material provides the surface morphology (smoothing) and improved carrier mobility that differentiates applicants' devices from the prior art.

Kizuki et al. clearly do not incorporate the surfactant into the crystalline structure. Kizuki et al. clearly state in column 4, lines 48-55:

Here, as shown in FIG. 3B, the surfactant epitaxy is a technique of supplying atoms C which are not involved in the growing thin film B and constantly remain segregated on the surface of the film to the substrate A in advance and then growing a desired thin film. The atoms C that remain surface segregated are called surfactants.

Surfactants are not involved into a growing crystal, and the surfactants remain segregated on the surface at all times even when the thickness of the crystal has increased as a result of a progress in growth.

Since Kizuki et al. do not incorporate the surfactant into the crystalline structure and since all of applicants' claims now call for a surfactant incorporated into the crystalline structure of the epitaxially grown semiconductor material, it is clear that the disclosed apparatus of Kizuki et al. is not similar to applicants' claimed structure. Thus, claims 16-26 are not anticipated by or obvious in view of the disclosure of Kizuki et al. and are allowable over Kizuki et al.

Claims 16-22 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yang et al. (*ELECTRONICS LETTERS* article). Applicants respectfully traverse these rejections.

Yang et al. do not describe the process or result of using the surfactant and, thus, do not teach applicants' novel structure. Yang et al. simply state that "using As or Sb [10] and Te [11] as surface active species, respectively." From the little disclosure available, it appears that Yang et al. process their structure with the surfactant remaining on the surface. Certainly, Yang et al. do not provide sufficient disclosure to make obvious applicants' novel structure in which surfactant atoms are incorporated into the crystalline structure. Thus, claims 16-26 are not anticipated by or obvious in view of the disclosure of Yang et al. and are allowable over Yang et al.

All of the claims presently in the application, i.e. claims 16-26, are believed to be in condition for allowance. Any questions or suggestions regarding the application or the amended claims submitted herewith should be directed to the undersigned attorneys for applicant at the telephone number listed below or by email to the email address listed below.

No fee is believed required for this Response, however, authorization is given to charge any additional fees associated with this communication to Deposit Account No. 070135. A duplicate copy of this sheet is enclosed.

An Information Disclosure Statement also accompanies this response along with a check for the \$180 fee.

Respectfully submitted,

GALLAGHER & KENNEDY, P.A.



Date: November 17, 2004

By: Thomas D. MacBlain
Reg. No. 24,583

Gallagher & Kennedy, P.A.
2575 East Camelback Road
Phoenix, AZ 85016-9225
(602) 530-8088
tdm@gknet.com
1231947